

ABSTRACT OF THE DISCLOSURE

A device for separating high mass to charge particles (M_1) from low mass to charge particles (M_2) in a plasma includes a cylindrical wall that surrounds a chamber and defines an axis. Rectangular shaped coils are
5 mounted on the wall to establish a magnetic field, B_0 , in the chamber that is aligned substantially perpendicular to the axis and which rotates about the axis. Circularly shaped coils are provided to generate a time-constant, axially aligned magnetic field, B_z , in the chamber. Passive, ring-shaped electrodes are positioned at the ends of the wall and connected to resistors which are
10 then grounded. The rotating magnetic field, B_0 , rotates the plasma in the axially aligned magnetic field, B_z , which in turn, induces a radially oriented electric field, E_r , in the chamber. The crossed fields (i.e. $E_r \times B_z$) cause the particles, M_1 , to strike the wall while the particles, M_2 , transit through the chamber.

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